What Really Causes A Heart Attack?

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Many people are confused about what **really** causes a heart attack, thinking cholesterol is the primary factor at play.

However, it really takes *a number of factors* to get there, with cholesterol actually being a *very small* part of the picture.

So, in this blog post, we're going to follow a heart attack from start to finish and explain which nutrients can play a preventive role in each step.

Maybe this will help clear things up once and for all.

Heart Attack Step 1: Endothelium is Injured

Atherosclerosis begins with an injury to the endothelium, the inner lining of a blood vessel wall.

The cells lining the endothelium are tightly bound together by adhesive proteins. This keeps the endothelium intact and impermeable to toxins and cholesterol.

Injury could be due to different factors, including blood sugar levels and high homocysteine.

1. *Blood Sugar*

Research shows that people with fasting glucose blood levels above 85 mg/dl are at greater risk for a heart attack.[1] Sugar can weaken the endothelium, causing gaps between endothelial cells. This can allow toxins and cholesterol to "seep through."

Supplement suggestions: *Cinnamon* and *green coffee extract* to help lower blood sugar levels.[2-3]

2. *Homocysteine*

Homocysteine is created when *methionine*, an amino acid found mostly in meats, is broken down. Everyone has homocysteine in their blood, but the problem kicks in when our levels get too high. This can ultimately damage your endothelium.

Supplement suggestion: Take *B vitamins* and *trimethylglycine (TMG)* to help maintain optimal homocysteine levels.[4]

Heart Attack Step 2: Cholesterol Moves In

A damaged endothelium allows cholesterol to enter your arterial walls. Then, these fats make their "home" inside of your artery. But, fortunately, not all cholesterol can easily "move in."

LDL particles, specifically small ones, can penetrate the endothelium. But larger LDL particles (because of their size) are kept out.

Supplement suggestion: Take *niacin* to help enhance the production of large LDL particles.[5]

Heart Attack Step 3: Oxidation and Inflammation

Cholesterol is not dangerous *until* it's oxidized. Oxidation changes its very nature, making it a target for an immune attack.

White blood cells, called *macrophages*, can eat oxidized cholesterol. These cells

change into cholesterol-eating foam cells and trigger chronic inflammation.

Smooth muscle cells lining the artery sense damage and create a fibrous cap, kind of like a scab. Calcium can then deposit onto the cap, which can harden and weaken the artery.

The fibrous cap in combination with calcium, cholesterol, and foam cells forms a plaque.

Supplement suggestions: *CoQ10* and *pomegranate* help protect cholesterol from oxidation,[6-7] and *vitamins D and K* can help prevent arterial calcification.[8-9]

Heart Attack Step 4: Plaque Breaks Off

Chronic inflammation, calcification, and other factors can cause plaques to become unstable. As a result, a piece can break off, causing a blood clot to form.

This clot can lodge in an artery and restrict blood flow to a specific part of the body. When it happens in the heart, it causes a heart attack.

Elevated levels of a blood clotting factor called *fibrinogen* increase the risk for a heart attack. Taking measures to maintain optimal blood levels is a good measure to prevent heart attacks.

Supplement suggestions: A turmeric extract called *curcumin* and *essential omega-3 fatty acids (EPA and DHA)* help ease inflammation.[10] *Pine bark* and *soy natto* extracts can help you maintain healthy fibrinogen levels.[11-12]

The Bottom Line

So there you have it: the 4 critical steps that ultimately lead to a heart attack. Did this help clear things up for you? *We hope so!*

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